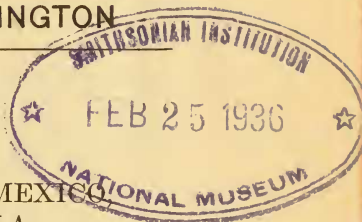


PROCEEDINGS
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EIGHT NEW ASTERACEAE FROM MEXICO,
GUATEMALA, AND HISPANIOLA.

BY S. F. BLAKE.

The new composites described in this paper have been found among collections recently received at the National Herbarium or in older material hitherto not critically examined.

Erigeron ortegae Blake, sp. nov.

Herbaceous, 30 cm. high and probably much more (the lower part not seen), essentially glabrous throughout; stem branching, striate-angled, pale green, whitish-dotted; stem leaves alternate, 1.5 to 3 cm. apart, elliptic-linear to linear-oblongate or linear-lanceolate, 3 to 4.8 cm. long, 5 to 8 mm. wide, acute, sessile or gradually narrowed into a short petioliform base, obscurely repand, rather firm, dull green on both sides, very narrowly pale-margined and when young somewhat spinulose-ciliolate, quintuplinerved with translucent veins, sometimes obscurely pubescent above; branch leaves similar but much smaller, usually oblongate and narrowed into a petiole-like base, sometimes with a few teeth toward apex; heads hemispheric, about 1.5 cm. wide, numerous, loosely panicle, the flowering branches minutely bracteate, erect, the sparsely subulate-bracted monocephalous peduncles 3 to 9 cm. long; disk 7 to 10 mm. high, about 1 cm. wide; involucre strongly graduate, about 4-seriate, 4 to 6 mm. high, the phyllaries all appressed, the outermost ovate-oblong, the others oblong, 1.5 to 1.8 mm. wide, obtuse or rounded, obscurely subherbaceous with subscarios ciliate margins, glabrous dorsally, 3-nerved or nerveless; receptacle rounded, alveolate; rays about 18, 1-seriate, white, fertile, the tube hirsutulous, 2.5 mm. long, the lamina linear-cuneate, tridenticulate, revolute in drying, 6-veined, 6 mm. long, 1.6 mm. wide; disk flowers numerous, fertile, their corollas pale yellow, hirsutulous on tube and lower part of throat, 5 mm. long (tube 2 mm., throat funnelform, 2.2 mm., teeth 5, ovate, 0.8 mm.); achenes of ray and disk similar, oblong, scarcely compressed, 5-nerved, glabrous, 2.5 to 2.8 mm. long; pappus of about 70 somewhat unequal, stiffish, barbellate, whitish bristles 3.5 mm. long; anther tips lance-subulate; style branches short, with short, deltoid, obtuse, externally papillose appendages.

Type in the U. S. National Herbarium, no. 1,084,210, collected at Balboa, Sinaloa, Mexico, Jan. 1923, by J. G. Ortega (no. 4974).

Erigeron ortegae is not closely related to any other species with which I am acquainted. It is somewhat similar in appearance to the smoother forms of *Erigeron bonariensis* L., but very different in the characters of the involucre and rays. The plant is more or less intermediate in character between *Aster* and *Erigeron*, but is referred to *Erigeron* on the basis of its short blunt style tips.

***Guardiola stenodonta* Blake, sp. nov.**

Suffrutescent, oppositely branched, slender, glabrous throughout except for the somewhat pubescent pedicels and tips of the phyllaries; upper internodes 1 to 2 cm. long; leaves opposite; petioles slender, margined only toward apex, 1 to 1.5 cm. long; leaf blades lanceolate or elliptic-lanceolate, 5 to 8 cm. long, 1.5 to 2.2 cm. wide across the basal lobes, 8 to 12 mm. wide near middle, acuminate to an acute apex, often falcate, hastately bilobed just above the acutely cuneate base (the lobes linear-subulate, attenuate, often falcate, wide-spreading, entire or sparsely toothed, 5 to 12 mm. long, about 1 mm. wide at base), abruptly contracted and cuneate above the lobes (there 2 to 4 mm. wide), acutely serrate with about 13 to 16 pairs of teeth 1 mm. high or less, slightly paler green beneath than above, weakly triplinerved above the base, finely reticulate with translucent veins and veinlets; heads about 4 to 8, clustered at tips of branches, about 1.2 cm. wide, on sparsely pubescent pedicels about 8 mm. long; disk thick-cylindric, 1.2 to 1.5 cm. high, 3 to 5 mm. thick; involucre 2-seriate, 8 to 9 mm. high, the outer phyllaries 4, subequal, oval-oblong, obtuse, about 4 mm. wide, scarious-margined, not at all carinate, many-nerved, sparsely pubescent toward apex, the inner (subtending the rays) membranous, similar to the pales; rays about 3, apparently white, fertile, the lamina oval, tridenticulate, 5.5 mm. long, 3.2 mm. wide; disk flowers about 13, sterile, their corollas whitish or perhaps cream-color, glabrous, becoming 11.5 mm. long (tube slender, 8 mm., throat campanulate, 1 mm., teeth oblong, acutish, 2.5 mm.); pales membranous, obtuse, ciliolate above, few-nerved, about 11 mm. long; ray achenes oblong, thickened, somewhat obcompressed, striate, sparsely pubescent, blackish, 5 mm. long, 2.2 mm. wide, epappose; anthers greenish, the filaments densely pilose; style (of hermaphrodite flowers) 2-parted, the branches linear-subulate, acuminate, hispidulous, without stigmatic lines.

Type in the U. S. National Herbarium, no. 1,084,211, collected at Balboa, Sinaloa, Mexico, Jan. 1923, by J. G. Ortega (no. 4986).

Related to *Guardiola mexicana* Humb. & Bonpl. and *G. arguta* (A. Gray) Robinson, but easily distinguished by the leaves, which are hastate with extremely long and narrow basal lobes and are abruptly contracted just above the lobes.

***Montanoa pteropoda* Blake, sp. nov.**

Suffrutescent; stem stout, erectish-branched above, subterete, striatulate, sordidly pilose-subtomentose with mostly appressed hairs, glabrescent; leaves opposite except in the inflorescence; petioles 1 to 3 cm. long, broadly

winged throughout, 7 to 18 mm. wide including the wings, these crenate-serrate, cordate-clasping at base, scarcely auriculate; blades rhombic-ovate, 8 to 10.5 cm. long, 4 to 9 cm. wide, trilobate about to middle, the terminal lobe acuminate, crenate-serrate, the lateral lobes acute, crenate-serrate and usually weakly 2 or 3-lobed on the outer side, the blade papery, deep green above, minutely and rather softly hispidulous-puberulous with incurved hairs, in age somewhat harsh, beneath rather densely griseous-puberulous (the hairs along the veins rufidulous) and somewhat gland-dotted, triplinerved at base of blade and densely prominulous-reticulate beneath; leaves of the inflorescence ovate, unlobed, 2.5 to 4.5 cm. long; heads rather numerous, cymose-panicled, 2.2 to 2.5 cm. wide, on sordidly pilose-tomentose straight or at length hooked peduncles 1.5 to 3 cm. long; disk in flower about 7 mm. high, 9 mm. thick, in fruit 1.7 to 2 cm. thick; outer phyllaries 5, oblong-ovate, 4 mm. long, obtusish, callous-apiculate, sordid-pilosulous; rays 10, white, pistillate, the lamina elliptic, bidentate, 8 to 10 mm. long; disk flowers numerous, their corollas white, puberulous with short few-celled hairs, 3.1 mm. long (tube 0.8 mm., throat broadly campanulate, 1.5 mm., teeth 0.8 mm.); pales at maturity thin and much inflated, wedge-obovate in lateral view, 1 cm. long, 5 mm. wide (when folded), somewhat repand at the broad truncate apex, abruptly spinose-mucronate (mucro straight, 0.5 mm. long), stipitate-glandular on the upper half and pilose on the costa; achenes obovoid, somewhat compressed, blackish, 2.8 mm. long, 1.8 mm. wide, 1-ridged on the sides, glabrous, epappose.

Type in the U. S. National Herbarium, no. 252,752, collected between San Martín and Todos Santos, Guatemala, altitude 2,135–2,590 meters, 25 Dec. 1895, by E. W. Nelson (no. 3616).

A species of the subgenus *Acanthocarpha*, nearest *M. purpurascens* Robins. & Greenm., but readily distinguished by its three-lobed leaves with the petioles broadly winged to the very base.

***Hymenostephium superaxillare* Blake, sp. nov.**

Herbaceous at least above, opposite-branched, the branches divergent, superaxillary (1 to 4 mm. above the axils); stem slender, striatulate, somewhat flattened at the nodes, glaucescent, sparsely tuberculate near the nodes with short incurved 1-celled conic hairs, these usually deciduous; internodes 8 to 12 cm. long; petioles slender, naked, similarly tuberculate, 5 to 15 mm. long; blades ovate, or the uppermost lance-ovate, 8 to 13 cm. long, 2.5 to 6 cm. wide, falcate-acuminate, at base narrowly or broadly cuneate, serrate nearly throughout (teeth about 18 pairs, depressed, mucronulate), thin-papery, above deep green, evenly but not densely scabrous-tuberculate with incurved conic hairs with lepidote bases, beneath somewhat lighter green, evenly but not densely tuberculate-hispidulous on veins and veinlets and sometimes minutely so on surface, triplinerved from near the base and weakly prominulous-reticulate beneath; heads 2.5 to 4 cm. wide, solitary at apex of stem and in the uppermost axils, on slender glabrous peduncles 2.5 to 8 cm. long; disk hemispheric, 8 to 10 mm. high, 8 to 13 mm. thick; involucre 3-seriate, somewhat graduate, 5 to 6 mm. high, the phyllaries ovate (1.8 to 2.5 mm. wide), acute or acuminate, with indurate, ribbed and

vittate base and subequal, usually spreading, herbaceous apex, tuberculate-hispidulous-ciliolate, on back glabrous or sparsely tuberculate-hispidulous; receptacle convex; rays 12, neutral, golden-yellow, the lamina elliptic-oblong, bidenticulate, about 15 mm. long, 4.5 mm. wide, 13-nerved; disk corollas very numerous, yellow, slender-cylindric, hispidulous on tube and lower half of throat, 5 mm. long (tube 0.8 mm., throat 3.5 mm., teeth 0.7 mm.); pales acuminate, many-striate, somewhat hispidulous, about 6 mm. long; achenes obovate-oblong, compressed, glabrous, epappose, 2.5 mm. long.

Type in the U. S. National Herbarium, no. 1,083,277, collected at La Bajada, Tamazula, Durango, Mexico, altitude 300-600 meters, Nov. 1921, by J. G. Ortega (no. 4437).

This species has the largest heads of any known *Hymenostephium*, and is further distinguished by its phyllaries, which are broader than in any other species and do not have the attenuate or very narrowly acuminate tips found in practically all the others. It is nearest to the epappose form of *H. cordatum* (Hook. & Arn.) Blake.

The conspicuously superaxillary branches from which the name is derived are shown by all the six or eight specimens of the type collection examined, and by no others in a large series of specimens representing the other species of the genus.

***Verbesina peninsularis* Blake, sp. nov.**

Suffrutescent or fruticose, 60 cm. high and more; stem rather slender, subterete, striatulate, wingless, white, rather densely hispidulous-pilosulous with mostly incurved or spreading hairs with subtuberculate bases; lowest leaves (of incomplete specimen examined) opposite, the others alternate; petioles 5 to 10 mm. long, cuneately winged to base by the decurrent lamina; blades triangular-ovate or sometimes lanceolate, the larger 9 to 11 cm. long, 4.5 to 5.8 cm. wide, acuminate, cuneate at base and decurrent on the petiole, coarsely and irregularly dentate (the teeth triangular, callous-tipped) and usually somewhat hastate-lobed at base, firm-papery, above dull green, densely incurved-hispidulous with tuberculate-based mostly deciduous hairs, scabrous, beneath slightly paler green, rather densely and somewhat harshly hispidulous with antrorse tuberculate-based hairs and somewhat gland-dotted, triplinerved about 1 cm. above the base and loosely prominulous-reticulate, the secondary veins few; heads 2.5 to 3 cm. wide, in a terminal short-pedunculate cyme of about 5 and on 1 or 2-headed peduncles from the upper axils, the pedicels 1 to 8 cm. long, pubescent like the stem; disk campanulate-hemispheric, 1.1 to 1.3 cm. high, about 1.5 cm. thick; involucre 2-seriate, subequal, 7 to 8 mm. high, the phyllaries oblong-ovate or oval-oblong, subappressed, the outer herbaceous, obtuse or acutish, hispid-pilose with glandular-tuberculate-based hairs and ciliate, 2 to 3.5 mm. wide, the inner thinner, subscarios, obtuse, less pubescent or nearly glabrous; rays about 10, pistillate, yellow, the tube pilose, 1.8 mm. long, the lamina linear-elliptic, 9 to 12 mm. long, about 2.8 mm. wide; disk flowers numerous, their corollas yellow, pilose on tube and base of throat, 6.7 mm. long (tube

1.5 mm., throat cylindric, 4 mm., teeth 1.2 mm. long); pales narrow, acuminate to obtuse, loosely pilose-ciliate above, 7 to 8 mm. long; disk achenes (submature) obovate, compressed, 4.5 mm. long, 1.8 mm. wide, glabrous on the faces or sparsely pilosulous above, very narrowly 2-winged, the wings ciliate; awns 2, slender, unequal, 3 to 4 mm. long.

Type in the U. S. National Herbarium, no. 565,313, collected 32 kilometers east of San Ignacio, Baja California, Mexico, altitude 365–610 meters, 19 Oct. 1905, by E. W. Nelson and E. A. Goldman (no. 7227).

A member of the section *Sonoricola*, related to *V. leptochaeta* A. Gray and *V. erosa* T. S. Brandeg. The latter has much narrower phyllaries and chiefly opposite leaves which are densely antrorse-hirsute or hirsute-pilose beneath. The former, a Chihuahuan species known to me only from description, is said to have opposite serrate leaves, narrowly oblong wide-spreading outer phyllaries, and small rays.

***Perityle macromeres* Blake, sp. nov.**

Herbaceous, 60 cm. high and more, the base not seen; stem stout (8 mm. thick below), somewhat branched, striate, sparsely villous near the nodes and very sparsely between them with several-celled hairs, obscurely glandular; lower internodes 14 cm. long; lower leaves (2 or more pairs) opposite, the others mostly alternate; petioles 1 to 3 cm. long; blades ovate-suborbicular in outline, 2 to 4 cm. long, 2 to 5.5 cm. wide, 3-nerved, deeply 3-lobed, the lateral lobes with 2 oblong lobes on the lower side, the terminal lobe rather deeply 3 or 5-lobed, the primary lobes all lacinate-lobed or toothed with acute or acutish teeth and rounded sinuses, thinnish, sparsely villous chiefly on the veins and margin; heads several, about 2.5 cm. wide, solitary on densely stipitate-glandular, sparsely villous, naked or bracteate peduncles 6 to 12 cm. long; disk rounded, 9 to 10 mm. high, 1.3 to 1.8 cm. wide; involucre sub-2-seriate, equal, 5 mm. high, the phyllaries lanceolate, acuminate, 2-ribbed, villous and stipitate-glandular; rays 13, fertile, apparently white, the lamina oblong, bluntly 3-toothed, 8 to 9 mm. long, 2.5 to 3 mm. wide; disk flowers very numerous, their corollas apparently whitish, 4-toothed, densely stipitate-glandular on tube, sparsely so on limb, pilosulous on teeth with several-celled hairs, 2.8 to 3.2 mm. long (tube 1.3 to 1.6 mm., throat funnelform-campanulate, 1 to 1.3 mm., teeth 0.3 to 0.5 mm.); achenes linear-obovate, 3 mm. long, very flat, blackish, densely ciliate on the narrow callous margins, glabrous on the faces; pappus awn 1, setiform, weak, retrorse-hispid above the middle, 2.2 mm. long; squamellaceous corona minute, ciliate; style branches with rather short, lanceolate, hispidulous tips.

Type in the U. S. National Herbarium, no. 565,548, collected at La Paz, Baja California, altitude 3 meters, 3 Feb. 1906, by E. W. Nelson and E. A. Goldman (no. 7483).

Related to *Perityle crassifolia* T. S. Brandeg. and *P. robusta* Rydb., and agreeing with them in the single, weak, retrorsely hispid pappus awn and the clavellate cilia of the achene, but differing in its much larger and thinner leaves and longer peduncles, as well as in its much scantier pubescence and

glandularity. *P. crassifolia* is very densely viscid-villous, almost arachnoid, and *P. robusta*, which is doubtfully distinct from *P. crassifolia*, is densely stipitate-glandular throughout and densely villous to middle, less densely so above.

***Perityle trichodonta* Blake, sp. nov.**

Suffruticulose, branched, many-stemmed, 10 cm. high, the stems glabrate; branches, peduncles, and leaves densely griseous-pilosulous with several-celled mostly spreading hairs; internodes of branches 3 to 5 mm. long; leaves opposite essentially throughout; petioles 2 to 3 mm. long, griseous-pilosulous; leaf blades ovate or rhombic-ovate, 3 to 5 mm. long, 2.5 to 5 mm. wide, obtuse, at base cuneate to subtruncate, entire or hastately 1-toothed on each side at base, thickish, densely impressed-punctate especially beneath; heads 7 mm. wide, solitary at apex of stem and in the uppermost axils, on peduncles 5 to 7 mm. long; disk subglobose-campanulate, 5 mm. high, 5 to 6 mm. thick; involucre sub-2-seriate, equal, 4 mm. high, the phyllaries about 24, linear, acute, double-ribbed, rather densely griseous-pilosulous on their exposed surface; rays 8, fertile, the lamina white, 1.5 to 1.8 mm. long, about 1.5 mm. wide, bluntly 3-toothed, gland-dotted on back; disk flowers very numerous, their corollas white, stipitate-glandular throughout, somewhat hirsute-pilose on tube, barbate-tufted on teeth outside near apex, 3 mm. long (tube 1 mm., throat funnelform-campanulate, 1.5 mm., teeth 4, ovate, 0.5 mm. long); achenes obovate-oblong, 1.8 to 2.2 mm. long, flat, blackish, ciliate on the whitish callous margins, sparsely hirsutulous on the faces above; awns 2, setiform, minutely hispidulous, equal or unequal, 1.5 to 2.2 mm. long; squamellae lacerate, 0.4 mm. long; style branches with rather short, subulate, hirsutulous tips.

Type in the U. S. National Herbarium, no. 301,934, collected in the Sierra Madre west of Bolaños, Jalisco, Mexico, 15-17 Sept. 1897, by J. N. Rose (no. 2978).

The type sheet has been identified as *Perityle jaliscana* A. Gray, a related species with much larger leaves, discoid heads, merely glandular corolla-lobes, and much shorter awns and squamellae. *P. trichodonta* is nearer *P. hofmeisteria* Rydb., a finely puberulent plant with petioles mostly much longer than the blades, and with the disk corollas merely glandular on the teeth.

***Anaethaphia enneantha* Blake, sp. nov.**

Shrub or small tree, leafy, the leaves closely crowded on the short lateral branches; young branchlets angulate, closely ochroleucous- or cinereous-tomentose, the older ones glabrate, gray-barked; leaves alternate; petioles cinereous-tomentose, 2 to 3 mm. long; leaf blades cuneate-obovate or obovate, 2 to 3.5 cm. long, 1 to 2 cm. wide (excluding the teeth), acute to subtruncate, spinose-tipped, acutely cuneate at base, spinose-dentate (teeth 3 to 5 pairs, 3 to 6 mm. long including the brownish spines), coriaceous, above deep green, glabrous from the first, somewhat shining, finely reticulate, beneath closely cinereous- or ochroleucous-tomentose, somewhat reticulate, the chief lateral veins about 4 pairs, prominulous

beneath; heads 9-flowered, turbinate-campanulate, solitary, sessile at tips of branches; involucre 2.1 to 2.3 cm. high, about 7-seriate, the phyllaries erect, indurate, at maturity essentially glabrous or slightly lanulose, or the outermost somewhat tomentose, all ciliolate below the apex, the outermost very small, deltoid-ovate, the middle triangular, the innermost lance-linear, all acuminate, scarcely mucronate; corollas tubular, somewhat hispidulous and glandular, at maturity 16.5 mm. long (tube 4.5 mm., throat 2 mm., teeth 10 mm., revolute at apex); achenes densely short-pilose, 5 mm. long; pappus brownish-tinged, 1.5 cm. long, the slender bristles stiff, spreading, somewhat paleaceous-connate at base; anthers and style long-exserted; style branches very short.

Type in the U. S. National Herbarium, no. 1,079,231, collected at Lajana, Samaná Peninsula, Santo Domingo, altitude about 100 meters, 30 April–2 May 1922, by W. L. Abbott (no. 2287).

Among the species of *Anastraphia* hitherto known from the island of Hispaniola the closest ally of this species is apparently *A. oligantha* Urban, which is readily separated by its 5-flowered heads. *A. enneantha* seems to be distinct from any of the numerous Cuban and Bahaman species, all of which, as well as the species of Hispaniola, have been listed and keyed by Britton.¹

¹Bull. Torrey Club 42: 379–387. 1915.